

HelmholtzZentrum münchen

German Research Center for Environmental Health

Protection of the Environment – Some Personal Thoughts

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European Commission – Jean Monnet Building

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Protection of the Environment

- Isn't it enough to protect of humans against ionising radiation?
- Is it necessary to protect an earthworm (one of the ICRP reference animals)?

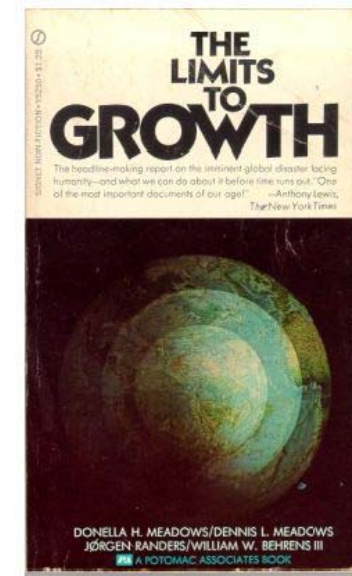
The Club of Rome

- Founded in 1968 by Aurelio Peccei, Alexander King
- Includes scientists, economists, businessmen, politicians, from all five continents who are convinced that the future of humankind is not determined once and for all and that each human being can contribute to the improvement of our societies
- Looks at the development of mankind in an integrated, holistic approach



The Limits to Growth (Meadows et al. 1972)

- Unusual at that time:
Use of a computer model to simulate global development
- Five variables investigated:
World population, industrialization, **pollution**, food production
and resource depletion
- 12 million copies, 37 translations
- „Best-selling environmental book in world history“ (wikipedia)



Should ionising radiation be considered as an environmental pollutant?

- There are many natural sources (radon, cosmic radiation, primordial radioisotopes)
- But: Atmospheric weapons tests (until 1962) lead to global contamination
Accidents – Khysthym (1957), Chernobyl (1986), Fukushima (2011), ...
Routine releases – Hanford (USA), Mayak (SU) ...

>> Humans should be protected (clear!), but an earthworm?

ICRP Publication 108

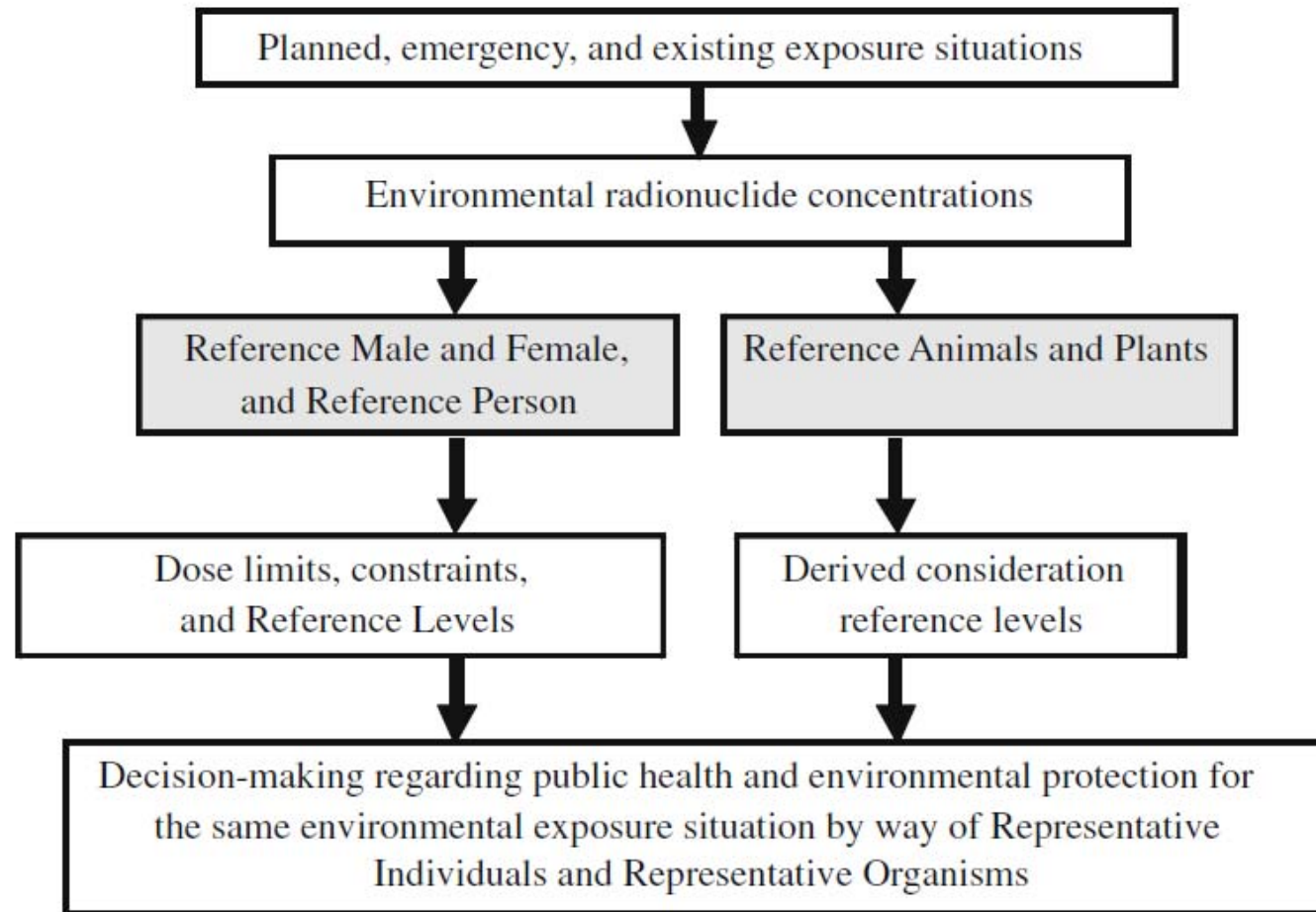


Fig. 8.1. Schematic approach to the protection of both the public and the environment in relation to any exposure situation (from Pentreath, in press).

Conceptual Difference

- Protection of humans: on an individual level
- Protection of an earthworm: **on a population level!**

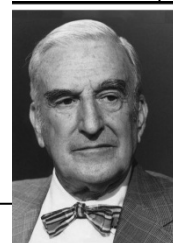
Personal impression

- It is common sense now that the environment should be protected (many institutions are involved, e.g., ICRP, EC, IAEA, IUR, national programmes)
- Scientific studies needed - Survey of peer-reviewed literature (not representative)
 - Radiat Environ Biophys, Health Phys, J Radiol Prot, Radiat Res, J Radiat Res, J Environ Radioact, Sci Total Environ, Radiat Prot Dosim
 - Number of papers
2010: 26
2011: 9
2012: 11
- Current trends and future – given that many data are missing
 - Produce missing data or find alternative approaches (useful)
 - Compare codes for decision makers (useful)
 - Develop sophisticated models (really needed?)
 - Apply concepts to contaminated sites (Fukushima) or waste disposal sites (useful)

**My personal view:
Protection of humans requires protection of the Earth's
ecosystem as a whole!**

**“Radiation protection is
a problem of philosophy,
morality, and the utmost
wisdom.”**

**Lauriston S. Taylor
(1902 – 2004)**



Thank You!